

Fig. 1

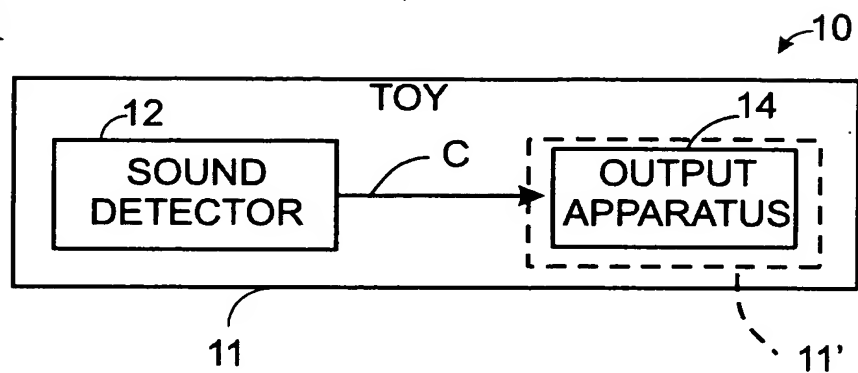


Fig. 2

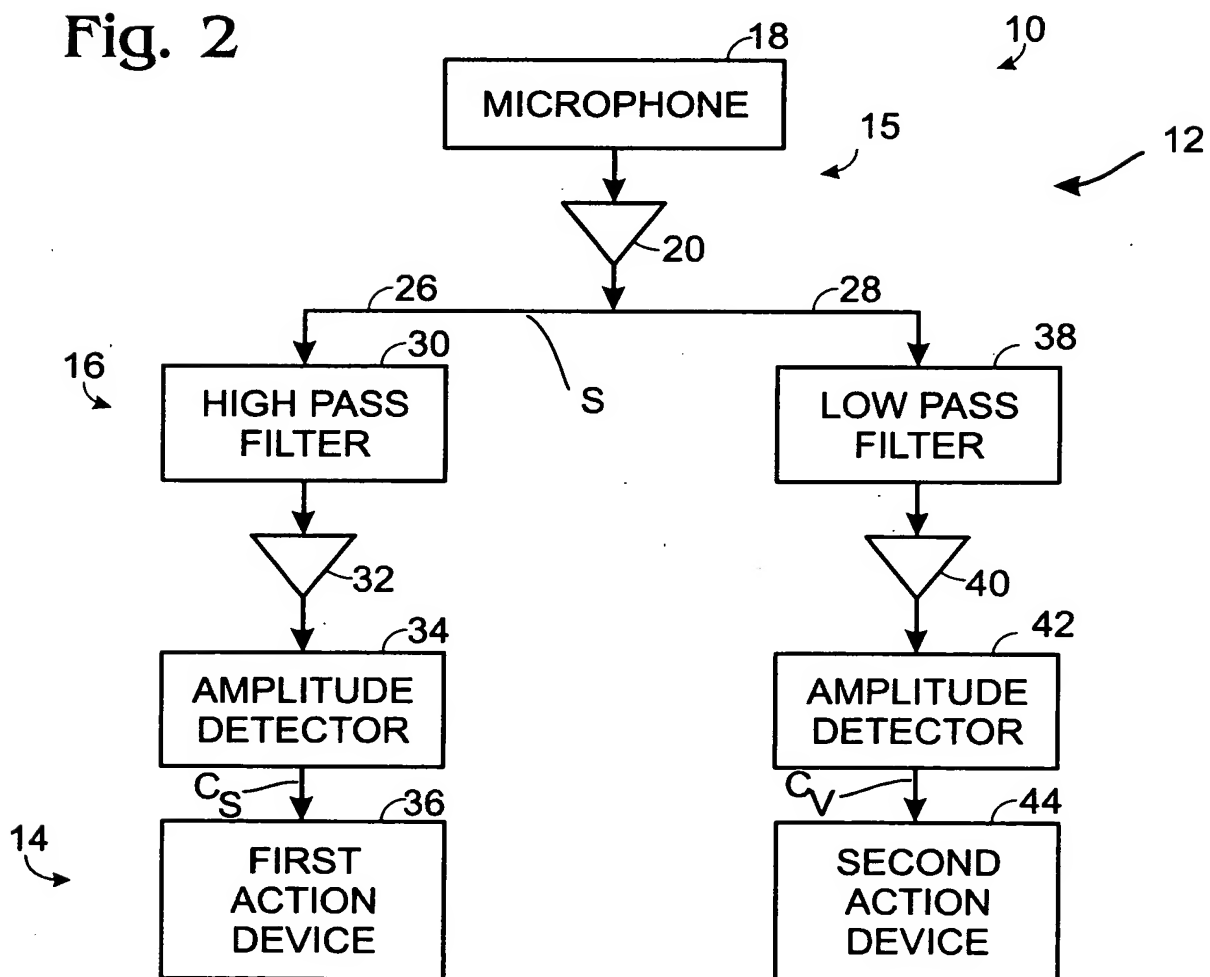


Fig. 3

The circuit diagram illustrates a multi-stage electronic device 10. The input stage 12 features a microphone 18 connected to a network of resistors (10K, 100K, 30K, 2K, 120K) and capacitors (10μF, .01μF, 10μF) to form a pre-amplifier. This stage includes two 9014 transistors and is powered by multiple 3-5V sources. The output of stage 12 is connected to stage 14, which contains an LM324 quad op-amp configured as a buffer or amplifier, with various feedback and input components like 100K resistors and 500pF capacitors. Stage 14's output drives stage 16, which consists of two op-amp comparators (52 and 46) that control two LEDs: a YELLOW LED 56 and a RED LED 50. Each LED is connected to a 9014 transistor (54 and 48) and a current-limiting resistor (56 and 50). The circuit is powered by 3-5V sources and includes several test points (TP1, TP2, TP3) for monitoring signal levels.

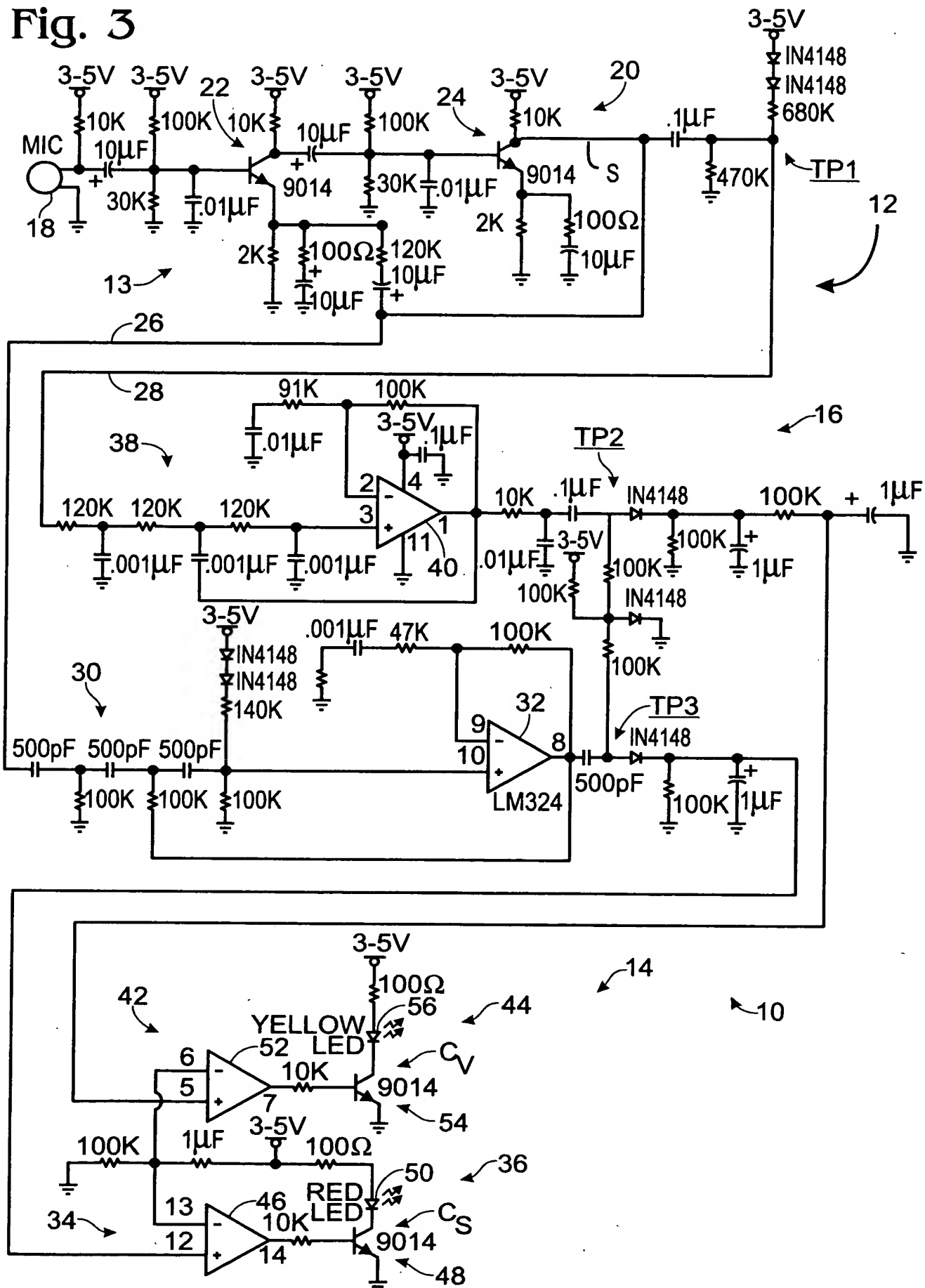


Fig. 4

FREQ. (Hz)	TP1		TP2		TP3	
	GAIN	dB	GAIN	dB	GAIN	dB
10	20.03	26.0	4.17	12.4		
20	53.26	34.5	19.44	25.8		
50	155.90	43.9	105.56	40.5		
100	277.95	48.9	269.44	48.6		
200	385.09	51.7	452.78	53.1		
500	434.78	52.8	627.78	56.0		
1K	433.22	52.7	588.89	55.4	1.19	1.5
2K	409.94	52.3	84.72	38.6	8.89	19.0
5K	304.35	49.7	1.82	5.2	144.44	43.2
10K	188.20	45.5			613.89	55.8
20K	103.11	40.3			286.11	49.1
50K	38.98	31.8			98.61	39.9
100K	16.30	24.2			33.33	30.5
200K	4.50	13.1			9.72	19.8

Fig. 5

